U.S. NUCLEAR REGULATORY COMMISSION

STANDARD REVIEW PLAN

OFFICE OF NUCLEAR REACTOR REGULATION

17.3 QUALITY ASSURANCE PROGRAM DESCRIPTION

REVIEW RESPONSIBILITIES

Primary - ~~Performance and Quality Evaluation Branch (LPEB)~~Quality Assurance and Maintenance Branch (HQMB)[1]

Secondary - None

I. AREAS OF REVIEW

~~LPEB~~HQMB[2] reviews and evaluates new quality assurance program descriptions (QAPDs) as submitted by the applicant. ~~LPEB~~HQMB[3] or appropriate Regional personnel review and evaluate proposed QAPD changes. A QAPD may be a quality assurance topical report or part of a safety analysis report (SAR).[4] The reviews address the quality assurance controls for the activities encompassed by the submittal that may affect the quality of items important to safety. SRP Section 17.3 provides guidelines for review of a QAPD developed following ASME standards NQA-1 and NQA-2 (References C.13 and C.14, respectively). SRP Sections 17.1 and 17.2 provide guidelines for review of programs based upon ANSI N45.2 (Reference C.12) and its daughter standards. Either approach is acceptable. The NRC Staff is developing new staff positions related to graded quality assurance and upon issuance of those positions, these sections will be considered for further revision.[5]

The QAPD is a top-level policy document in which a facility's management sets the tone and establishes the manner in which quality is to be achieved. It is a product of senior-level management, and it represents an organization's overall philosophy regarding quality.

The individual performing the work determines the level of quality that is achieved. Therefore, the applicant must develop and maintain a philosophy whereby each individual, properly trained

USNRC STANDARD REVIEW PLAN

Standard review plans are prepared for the guidance of the Office of Nuclear Reactor Regulation staff responsible for the review of applications to construct and operate nuclear power plants. These documents are made available to the public as part of the Commission's policy to inform the nuclear industry and the general public of regulatory procedures and policies. Standard review plans are not substitutes for regulatory guides or the Commission's regulations and compliance with them is not required. The standard review plan sections are keyed to the Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants. Not all sections of the Standard Format have a corresponding review plan.

Published standard review plans will be revised periodically, as appropriate, to accommodate comments and to reflect new information and experience.

Comments and suggestions for improvement will be considered and should be sent to the U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, Washington, D.C. 20555.

and motivated, achieves the highest quality of performance of which he or she is capable. This emphasis on individual performance reinforces the importance of the self-assessment process, the object of which is to independently review and evaluate overall performance. It also underscores management's role to provide integration, discipline, and the required support to ensure success.

This section of the Standard Review Plan (SRP) is organized into the three discrete areas of activity: management, performance/verification, and self-assessment. Encompassed within the three areas are the 18 quality assurance (QA) criteria of 10 CFR Part 50, Appendix B. The SRP outlines a standardized QA program for construction permit holders, their principal contractors, and operating facility licensees. The QA program applies to all phases of a facility's life, including design, construction, operation, and modification~~, and decommissioning~~.[6]

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C. SELF-ASSESSMENT

1. Methodology
2. Assessment

Review Interfaces[7]

The HQMB reviews reliability assurance programs under SRP Section 17.4 (proposed).[8]

The HQMB will coordinate other branches' evaluations that interface with the overall review of the system as follows:

- The EMCB reviews the adequacy of programs for assuring the integrity of bolting and threaded fasteners as part of its primary review responsibility for SRP Section 3.13.[9]

For those areas of review identified above as being reviewed as part of the primary review responsibility of other branches, the acceptance criteria and their methods of application are contained in the referenced SRP sections of the corresponding branch.[10]

II. ACCEPTANCE CRITERIA

~~This section outlines and specifies the NRC's acceptance criteria for QAPDs.~~[11]

1.[12] 10 CFR Part 21 requires reporting of defects or failures to comply with applicable rules, regulations or licenses.[13]

2. 10 CFR Part 50, §50.55a requires that structures, systems and components (SSC) be designed, fabricated, erected, constructed, tested and inspected to quality standards commensurate with the importance of the safety function to be performed.[14]

3. 10 CFR Part 50, §50.55(e) requires holders facility construction permits to have procedures for evaluating and reporting of defects or noncompliances.[15]

4. ~~Criterion 1 of~~ 10 CFR Part 50, Appendix A, General Design Criterion 1 (GDC 1), "Quality Standards and Records," ~~"General Design Criteria for Nuclear Power Plants,"~~[16] requires that a QA program be established and implemented.

5. Appendix B of 10 CFR Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," specifies 18 quality criteria which must be addressed in a QAPD.

Except when acceptable alternatives are provided, the specific~~acceptance~~ criteria[17] that follow provide attributes to be addressed for a QAPD to be found acceptable. The QAPD should describe how each of the ~~acceptance~~[18] criteria will be met.

A. MANAGEMENT

1. Methodology

a. At the most senior management level, the applicant (that is, the organization applying to have its QAPD reviewed and accepted by the NRC) is to issue a written QAPD that establishes the quality policy and commits the organization to implement it.

b. The QAPD is to be binding on all personnel, including management personnel having responsibility for costs and schedules.

c. The QAPD is to include the criteria used to identify the items and activities to which the QA program applies. A list of items under the control of the quality assurance program is to be established and maintained at the applicant's facility.

d. The QAPD is to provide measures to ensure the quality of items and activities to an extent consistent with their importance to safety.

2. Organization

a. The QAPD is to contain an organizational description that addresses the organizational structure, functional responsibilities, levels of authority, and interfaces. The organizational description is to include the onsite and offsite organizational elements that function under the cognizance of the QA program. Functional responsibilities include activities such as preparing, reviewing, approving, and verifying designs; qualifying suppliers; preparing, reviewing, approving, and issuing instructions, procedures, schedules, and procurement documents; purchasing; verifying supplier activities; identifying and controlling acceptable and nonconforming hardware and software; manufacturing; calibrating and controlling measuring and test equipment; qualifying and controlling special processes; constructing; inspecting; testing; startup; operating; performing maintenance; performing the self-assessment function; decommissioning; and controlling records.

b. There is to be independence between persons and organizations executing performance activities and those executing verification and self-assessment activities. The degree of independence may be commensurate with the activity's relative importance to safety.

c. The person filling the most senior-level management position is responsible for implementing the QA policy and program.

d. A management position, in which the responsibility for carrying out the self-assessment function, including independent review-group activities, audits, and other independent assessments resides, is to be established. The person filling this position is to:

(1) Have sufficient authority and organizational freedom to implement assigned responsibilities.

(2) Report at a management level sufficiently high to ensure that cost and schedule considerations do not unduly influence decision making.

(3) Have effective lines of communication with persons in other senior management positions.

(4) Have no unrelated duties or responsibilities that would preclude full attention to assigned responsibilities.

When site activities warrant, an onsite management position is to be established for which the above characteristics and responsibilities for the onsite activities apply.

e. Major delegation of work to participants outside the applicant's organization is to be identified and described, as follows:

(1) The organizational elements responsible for delegated work are to be identified.

(2) Management controls and lines of communication between the applicant and the delegated organization are to be established.

(3) Responsibility for the QA program and the extent of management oversight by the applicant are to be established.

(4) The performance of delegated work is to be formally evaluated by the applicant.

3. Responsibility

a. The applicant is to retain and exercise the responsibility for the scope and implementation of an effective overall QA program.

b. The applicant may delegate part or all of the activities of planning, establishing, and implementing the overall QA program to others but is to retain the responsibility for the program's effectiveness.

c. Senior-level management is to assess annually the adequacy of the QA program's implementation.

d. The applicant is responsible for ensuring that the applicable portion of the QA program is properly documented, approved, and implemented (people are trained and resources are available) before an activity within the scope of the QA program is undertaken by the applicant or by others.

e. Individual managers are to ensure that personnel working under their management cognizance are provided the necessary training and resources to accomplish their assigned tasks.

f. The manager responsible for their implementation is to approve the procedures that implement the QA program. These procedures are to reflect the QA policy, and work is to be accomplished in accordance with them.

4. Authority

a. When the applicant delegates responsibility for planning, establishing, or implementing any part of the overall QA program, sufficient authority to accomplish the assigned responsibilities also is to be delegated.

b. Responsibility and authority to stop unsatisfactory work and control further processing, delivery, installation, or use of nonconforming items (such as structures, systems, components, parts, materials, equipment, consumable materials, and software) is to be assigned by the applicant such that cost and schedule considerations do not override safety considerations.

5. Personnel Training and Qualification

a. Personnel assigned to implement elements of the QA program are to be capable of performing their assigned tasks.

b. Training programs to ensure that personnel achieve and maintain suitable proficiency are to be established and implemented.

c. Personnel training and qualification records are to be maintained.

6. Corrective Action

a. Plant management, at all levels, is to foster a "no-fault" attitude toward the identification of conditions that are adverse to quality, such as failures, malfunctions, nonconformances, and out-of-control processes, including the failure to follow procedures.

b. A corrective action program is to be established and implemented that includes prompt identification, documentation, classification, cause analysis, correction of the conditions, elimination of the cause of significant conditions, and followup of conditions that are adverse to quality. The program is to include provisions that ensure that corrective actions are not inadvertently nullified by subsequent actions.

c. Specific responsibilities within the corrective action program may be delegated, but the applicant is to maintain responsibility for the program's effectiveness.

d. Nonconforming items (those that do not meet quality requirements) are to be properly controlled to prevent their inadvertent test, installation, or use. They are to be reviewed and either accepted, rejected, repaired, or reworked.

e. Reports of conditions that are adverse to quality are to be analyzed to identify trends in quality performance. Significant conditions adverse to quality and significant trends are to be reported to the appropriate level of management.

7. Regulatory Commitments

a. The applicant is to comply with 10 CFR Part 21, General Design[19] Criterion 1 of Appendix A to 10 CFR Part 50, Appendix B to 10 CFR Part 50, 10 CFR 50.55a, and 10 CFR 50.55(e), as part of the overall QA program.

b. Except where acceptable alternatives are provided, the applicant ~~is to comply with~~should follow[20] the regulatory positions in the appropriate revisions of the regulatory guides listed in subsection ~~V~~III.A of this ~~chapter~~SRP Section.[21] Subsection ~~V~~III.A[22] lists regulatory guides issued in response to Appendix B to 10 CFR Part 50. (Regulatory Guides 1.26 and 1.29 are included to ensure that acceptable QA requirements are specified for items that they address.)

c. Except where acceptable alternatives are provided, the applicant ~~is to comply with~~should follow[23] the QA guidance in the appropriate revisions of the applicable documents listed in ~~Section~~ subsection ~~V~~III.B of this ~~chapter~~SRP Section.[24] ~~Section~~ Subsection ~~V~~III.B[25] lists documents that contain programmatic QA guidance for specific items and activities that are important to safety.

d. For Class 1, 2, and 3 items covered by Section III of the ASME Boiler and Pressure Vessel Code, the code QA requirements are to be supplemented by the guidance of the regulatory guides in ~~Section~~ subsection ~~V~~III.A[26].

e. The NRC is to be notified of QAPD changes in accordance with 10 CFR 50.54(a)(3) and 50.55(f)(3).

B. PERFORMANCE/VERIFICATION

1. Methodology

a. Personnel performing work activities such as design, engineering, procurement, manufacturing, construction, installation, startup,

maintenance, modification, and operation~~, and decommissioning~~[27] are responsible for achieving acceptable quality.

b. Personnel performing verification activities are responsible for verifying the achievement of acceptable quality.

c. Work is to be accomplished and verified using instructions, procedures, or other appropriate means that are of a detail commensurate with the activity's complexity and importance to safety.

d. Criteria that define acceptable quality are to be specified, and verification is to be against these criteria.

2. Design Control

a. A program is to be established and implemented for the design of items that are important to safety.

b. The program is to include provisions to control design inputs, processes, outputs, changes, interfaces, records, and organizational interfaces.

c. Design inputs (such as the design bases and the performance, regulatory, quality, and quality verification requirements) are to be correctly translated into design outputs (such as specifications, drawings, procedures, and instructions).

d. The final design output is to relate to the design input in sufficient detail to permit verification.

e. The design process is to ensure that items and activities that are important to safety are selected and independently verified consistent with their importance to safety to ensure they are suitable for their intended application.

f. Changes to final designs (including field changes and modifications) and dispositions of nonconforming items to use as is or repair are to be subjected to design control measures commensurate with those applied to the original design and approved by the organization that performed the original design or a qualified designate.

g. Interface controls (internal and external between participating design organizations and across technical disciplines) for the purpose of developing, reviewing, approving, releasing, distributing, and revising design inputs and outputs are to be defined.

h. Design records, maintained to provide evidence that the design was properly accomplished, are to include not only the final design output and

revisions to the final output, but also the important design steps (calculations, analyses, and computer programs, for example) and the sources of input that support the final output.

3. Design Verification

   a. A program is to be established and implemented to verify the acceptability of design activities and documents. Design inputs, processes, outputs, and changes are to be verified.

   b. Verification methods include, but are not limited to, design reviews, alternative calculations, and qualification testing.

   c. When a test program is used to verify the acceptability of a specific design feature, the test program is to demonstrate acceptable performance under conditions that simulate the most adverse design conditions that are expected to be encountered.

   d. Independent design verification is to be completed before design outputs are used by other organizations for design work and before they are used to support other activities such as procurement, manufacture, or construction. When this timing cannot be achieved, the unverified portion of the design is to be identified and controlled. In all cases, the design verification is to be completed before relying on the item to perform its function and before its installation becomes irreversible (requiring extensive demolition or rework).

   e. In exceptional circumstances, the designer's immediate supervisor can perform the design verification, provided (1) the supervisor is the only technically qualified individual capable of performing the verification, (2) the need is individually documented and approved in advance by the supervisor's management, and (3) the frequency and effectiveness of the supervisor's use as a design verifier are independently verified to guard against abuse.

   f. Design verification procedures are to be established and implemented to ensure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria are identified, the verification is satisfactorily accomplished, and the results are properly recorded.

4. Procurement Control

   a. A program is to be established and implemented to ensure that purchased items and services are of acceptable quality.

b. The program is to include provisions for evaluating prospective suppliers and selecting only qualified suppliers.

c. The program is to include provisions for ensuring that qualified suppliers continue to provide acceptable products and services.

d. The program is to include provisions (such as source verification, receipt inspection, pre-installation and post-installation tests, and certificates of conformance) for accepting purchased items and services.

e. Applicable technical, regulatory, administrative, and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR Part 21) are to be invoked for procurement of items and services.

f. The program is to include provisions for ensuring that documentary evidence that an item conforms to procurement requirements is on site before the item is placed in service or used.

g. The program is to include provisions for ensuring that procurement, inspection, and test requirements have been satisfied before an item is placed in service or used.

h. The procurement of components, including spare and replacement parts, is to be subject to quality and technical requirements suitable for their intended service and to the purchaser's current QA program requirements.

i. Appropriate controls for the selection, determination of suitability for intended use (critical characteristics), evaluation, receipt, and quality evaluation of commercial-grade items are to be imposed to ensure that they will perform satisfactorily in service.

5. Procurement Verification

a. A program is to be established and implemented to verify the quality of purchased items and services at intervals and to a depth consistent with the item's or service's importance to safety, complexity, and quantity and the frequency of procurement.

b. The program is to be executed in all phases of procurement. As necessary, this may require verification of activities of suppliers below the first tier.

6. Identification and Control of Items

a. A program is to be established and implemented to identify and control items (including consumable materials and items with limited shelf life) to prevent the use of incorrect or defective items.

b. Identification of each item is to be maintained throughout fabrication, erection, installation, and use so that the item can be traced to its documentation. Traceability is to be maintained to an extent consistent with the item's importance to safety.

7. Handling, Storage, and Shipping

a. A program is to be established and implemented to control the handling, storage, shipping, cleaning, and preserving of items to prevent their damage, loss, and deterioration.

b. Special protective measures (such as containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels, and temperature levels) are to be specified and provided when required to maintain acceptable quality.

c. Specific procedures are to be developed and used for cleaning, handling, storage, packaging, shipping, and preserving items when required to maintain acceptable quality.

d. Items are to be marked and labeled during packaging, shipping, handling, and storage to identify, maintain, and preserve the items' integrity and indicate the need for special controls.

8. Test Control

a. A test control program is to be established and implemented to demonstrate that items will perform satisfactorily in service.

b. Criteria are to be defined that specify when testing is required.

c. The test control program is to include, as appropriate, proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, and operational tests.

d. Test procedures are to be developed that include (1) instructions and prerequisites to perform the test, (2) use of proper test equipment, (3) acceptance criteria, and (4) mandatory inspection hold points as required.

e. Test results are to be documented and reviewed by the management of the testing organization and the management having responsibility for the item being tested.

f. When acceptance criteria are not met, corrected areas are to be retested.

9. Measuring and Test Equipment Control

   a. A program is to be established and implemented to control the calibration, maintenance, and use of measuring and test equipment.

   b. The types of equipment covered by the program (such as instruments, tools, gages, reference and transfer standards, and nondestructive examination equipment) are to be defined.

   c. Measuring and test equipment is to be calibrated at specified intervals (or immediately before and after use) on the basis of the item's required accuracy, intended use, frequency of use, and stability characteristics and other conditions affecting its performance.

   d. Measuring and test equipment is to be labeled, tagged, or otherwise controlled to indicate its calibration status and to ensure its traceability to calibration test data.

   e. Measuring and test equipment is to be calibrated against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, when this is not possible, have an accuracy that ensures the equipment being calibrated will be within the required tolerance.

   f. If nationally recognized standards exist, calibration standards are to be traceable to them. Except where calibration standards with the same accuracy as the instruments being calibrated are shown to be adequate for the requirements, calibration standards are to have a greater accuracy than the standards being calibrated.

   g. Measuring and test equipment found out of calibration is to be tagged or segregated and not used until it is recalibrated. The acceptability of items measured, inspected, or tested with an out-of-calibration device is to be determined.

10. Inspection, Test, and Operating Status

   a. As applicable, inspection, test, and operating status of items is to be verified before their release, fabrication, receipt, installation, test, and use to preclude inadvertent bypassing of inspections and tests and to prevent inadvertent operation.

   b. The application and removal of status indicators and other labels are to be controlled.

11. Special Process Control

    a. A program is to be established and implemented to ensure that special processes, such as welding, heat treating, and nondestructive examination, are properly controlled.

    b. The criteria that establish which processes are special are to be described.

    c. Special processes are to be accomplished by qualified personnel using qualified procedures and equipment in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

12. Inspection

    a. A program is to be established and implemented for inspections (source, in-process, final, receipt, maintenance, modification, in-service, operations, and decommissioning). The inspection program may be implemented by or for the organization performing the activity to be inspected.

    b. Provisions to ensure inspection planning is properly accomplished are to be established. Planning activities are to identify the characteristics and activities to be inspected, the inspection techniques, the acceptance criteria, and the organization responsible for performing the inspection.

    c. Provisions to identify inspection hold points, beyond which work is not to proceed without the consent of the inspection organization, are to be defined.

    d. Inspection results are to be documented by the inspector and reviewed by management.

    e. When acceptance criteria are not met, corrected areas are to be reinspected.

13. Corrective Action

    a. Performance and verification personnel are to (1) identify conditions that are adverse to quality, (2) suggest, recommend, or provide solutions to the problems, and (3) verify resolution of the issue.

    b. Reworked, repaired, and replacement items are to be inspected and tested in accordance with the original inspection and test requirements or specified alternatives.

14. Document Control

a. A program is to be established and implemented to control the development, review, approval, issue, use, and revision of documents.

b. The scope of the document control program is to be defined. Examples of documents to be controlled include design drawings, as-built drawings, engineering calculations, design specifications, computer codes, purchase orders and related documents, vendor-supplied documents, audit and surveillance procedures, operating procedures, emergency operating procedures, technical specifications, nonconformance reports, corrective action reports, work instructions and procedures, calibration procedures, quality verification procedures, and inspection and test reports.

c. Revisions of controlled documents are to be reviewed for adequacy and approved for release by the same organization that originally reviewed and approved the documents or by a designated organization that is qualified and knowledgeable.

d. Controlled copies of instructions and procedural documents are to be distributed to and used by the person performing the activity.

e. The distribution of new and revised controlled documents is to be in accordance with established timeliness guidelines. Superseded documents are to be controlled.

15. Records

a. A program is to be established and implemented to ensure that sufficient records of items and activities (such as design, engineering, procurement, manufacturing, construction, inspection and test [such as manufacturer's, proof, receipt, pre-operational, and post-installation], installation, pre-operation, startup, operations, maintenance, modification, decommissioning, and audits) are generated and maintained to reflect completed work.

b. The program is to provide provisions for the administration, receipt, storage, preservation, safekeeping, retrieval, and disposition of records.

C. SELF-ASSESSMENT

1. Methodology

a. Personnel responsible for carrying out the self-assessment function, including safety committee activities, audits, and other independent assessments, are to be cognizant of day-to-day activities so that they can act in a management advisory function. For example, during the

operations phase of a nuclear power plant, this would involve monitoring the overall performance of the plant, identifying anomalous performance and precursors of potential problems, reporting findings in an understandable form and in a timely fashion to a level of line management having the authority to effect corrective action, reporting results back to line management, and verifying satisfactory resolution of problems.

b. Organizations performing self-assessment activities are to be technically and performance oriented, with their primary focus on the quality of the end product and a secondary focus on procedures and processes.

c. Personnel performing self-assessment activities are not to have direct responsibilities in the area they are assessing.

d. Self-assessments are to be accomplished using instructions, procedures, or other appropriate means that are of a detail commensurate with the activity's complexity and importance to safety.

2. Assessment

a. A program of planned and periodic assessments is to be established and implemented to confirm that activities affecting quality comply with the QA program and that the QA program has been implemented effectively.

b. Assessments are to provide comprehensive independent evaluation of activities and procedures.

c. Planning activities are to identify the characteristics and activities to be assessed and the acceptance criteria.

d. Scheduling and resource allocation are to be based on the status and safety importance of the activity or process being assessed.

e. Scheduling is to be dynamic and resources are to be supplemented when QA program effectiveness is in doubt.

f. Assessment results are to be documented and reviewed by the assessor's management and by management having responsibility in the area assessed. Followup action, including a re-look at deficient areas, is to be initiated as necessary.

g. When any work carried out under the requirements of the QA program is delegated to others, implementation of that part of the work is to be assessed by the applicant.

h. Assessments are to be conducted using predetermined acceptance criteria.

Technical Rationale[28]

The technical rationale for application of these acceptance criteria to the quality assurance program description is discussed in the following paragraphs:

1. Compliance with 10 CFR Part 21 and 10 CFR 50.55(e) requires reporting of defects or failures to comply that are determined to be substantial safety hazards. Part 21 and 50.55(e) specify what constitutes substantial safety hazards and the format and schedule for such reporting.

   10 CFR Part 21 and 10 CFR 50.55(e) are applicable to this section because reportable defects or noncompliances should be identified, evaluated and reported under the QA Program.

   Meeting the requirements of 10 CFR Part 21 or 10 CFR 50.55(e) provides assurance that substantial safety hazards are: 1) evaluated; 2) subject to proper corrective action; and 3) identified to the Commission so they can evaluate the adequacy of corrective actions and consider any generic implications.

2. Compliance with 10 CFR 50.55a requires that SSC be designed, fabricated, erected, constructed, tested and inspected to quality standards commensurate with the importance of the safety function to be performed.

   10 CFR 50.55a applies to this section because the QAPD covers the programmatic controls for application of appropriate quality standards.

   Compliance with 10 CFR 50.55a provides assurance that SSC will be designed, fabricated, erected, constructed, tested and inspected in a manner that will facilitate satisfactory performance of their safety functions.

3. Compliance with GDC 1 requires that a quality assurance program be established and implemented to provide adequate assurance that SSC important to safety will satisfactorily perform their function.

   GDC 1 is applicable to this section because it mandates the establishment of a quality assurance program. SRP Section 17.3 describes the staff's position regarding the content and review of an applicant's required quality assurance program. Regulatory Guides 1.28 and 1.33 provide guidance for methods that are acceptable to the staff for complying with GDC 1.

   Meeting the requirements of GDC 1 provides assurance that SSC important to safety will be designed, fabricated, constructed, and tested in a manner that will facilitate the satisfactory performance of their intended function.

4. Compliance with 10 CFR Part 50, Appendix B, pursuant to §50.34, requires that every applicant for a construction permit include in its preliminary safety analyses report a

description of the QA program for the design, fabrication, construction, and testing of the SSC important to safety.

10 CFR Part 50, Appendix B, is applicable to this section because it specifies the criteria for establishing a QA program for the design and construction of a nuclear power plant. SRP Section 17.3 provides guidance related to staff review and approval of the required QA program. Regulatory Guides 1.28 and 1.33 describe methods acceptable to the staff for establishing and implementing such a program.

Meeting the requirements of 10 CFR Part 50, Appendix B, provides assurance that Nuclear Power Plants will be designed, fabricated, constructed, and tested in a manner that will not cause undue risk to public health and safety.

III. REVIEW PROCEDURES

New QAPDs will be reviewed against the acceptance criteria described in ~~Section~~ subsection II, including the applicant's commitment to the applicable references listed in ~~Section~~ subsections ~~V~~III.A and III.B, below.[29] Any exceptions or alternatives to this SRP section, including the applicable references in ~~Section~~ subsections ~~V~~III.A and III.B,[30] will be reviewed to ensure that they are defined and that an adequate basis exists for their acceptance. When required, the ~~Performance and Quality Evaluation Branch~~HQMB[31] will prepare a request for additional information for the applicant and review the response for acceptability.

Changes to a QAPD previously accepted by the NRC will be reviewed to determine their acceptability. The changed QAPD will be compared against the previously accepted QAPD, its controls, and the appropriate controls in this Chapter ~~17~~[32] of the Standard Review Plan to determine the acceptability of the changes. When required, the reviewing organization will prepare a request for additional information for the applicant and review the response for acceptability.

Upon concluding that the QAPD describes an acceptable quality assurance program, the reviewing organization may request that an inspection be performed by Office of Nuclear Reaction Regulation (NRR)[33] or Regional personnel, as appropriate. The inspection will assess the applicant's interpretation and translation of the QAPD commitments into its procedures, processes, and organizational staffing. The inspection will focus on the effectiveness of the QAPD implementation.

Through review of the information provided by the applicant and, as required, meetings with the applicant; review of applicable NRC inspection reports; and discussion with involved NRC inspectors, a judgment is made of the applicant's capability to carry out its quality assurance responsibilities. The reviewer's satisfaction with the quality assurance program commitments, the description of how the commitments will be met, the organizational arrangements, and the capabilities to fulfill the QAPD should lead to the conclusion of acceptability as described in subsection IV.

[34]A. The reviewer should verify that the QAPD addresses the following regulatory guidance issued in response to Appendix B of 10 CFR Part 50:

1. Regulatory Guide 1.8 with respect to qualification and training of personnel.

2. Regulatory Guide 1.26 with respect to classification of equipment.

3. Regulatory Guide 1.28 with respect to quality assurance program requirements, using NQA-1 and NQA-2.

4. Regulatory Guide 1.29 with respect to classification of equipment.

5. Regulatory Guide 1.33, with respect to quality assurance program requirements (operations phase), with appropriate substitution of NQA-1 and NQA-2 for N45.2 and its daughter standards.

6. Regulatory Guide 1.152 with respect to quality assurance for programmable digital computer software in safety-related systems.

7. Generic Letter 89-02 (Reference A.7) and its endorsement of EPRI NP-5652, (Reference A.8) as augmented by Generic Letter 91-05 (Reference A.9) with respect to inspection and dedication of commercial grade equipment.[35]

B. The reviewer verifies, as appropriate, implementation of the following additional programmatic QA Guidance:[*36]

1. NUREG-0660 (Reference B.10), TMI Action Plan item I.F.1 was established to address the expansion of the QA list required by 10 CFR 50, Appendix B. Item I.F.1 was resolved without additional requirements for expansion of the QA list. However, prior to resolution of I.F.1, 10 CFR 50 was revised to incorporate additional TMI-related requirements applicable to certain applicants for construction permits and manufacturing licenses. 10 CFR 50.34(f)(3)(ii) requires that the QA list required by 10 CFR 50, Appendix B, include all structures, systems, and components (SSCs) important to safety. The requirement is also applicable to Design Certification applicants via 10 CFR 52.47(a)(I)(ii). Generic Letter 84-01 (Reference B.11) is related to this issue and indicates that SSCs important to safety would be included in the QA list 'in specific situations.'[37] Regulatory Guides 1.26 and 1.29 should be sufficient to identify those non-safety-related SSC considered important to safety. (Also note that 10 CFR 50.49 defines what electrical equipment is considered important to safety and Regulatory Guide 1.97 lists accident monitoring equipment considered important to safety.)[38]

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[*]Guidance applicable to non-safety-related SSC may be by: 1) application of portions of the QAP required by 10 CFR 50, Appendix B; or 2) application of a separate program(s) specifically for non-safety-related SSC.

2. 10 CFR 50.120 requires that the training program be periodically evaluated and revised as appropriate to reflect changes to the quality assurance requirements.[39]

3. Fire protection QA controls are to be in accordance with Regulatory Positions C.2 and C.4 of Branch Technical Position SPLB 9.5-1 attached to SRP Section 9.5.1, including Generic Letter 82-21 (Reference B.12) with respect to fire protection audits.[40]

4. Radioactive waste QA controls are to be in accordance with Regulatory Position C.6 of Regulatory Guide 1.143.[41]

5. QA controls with respect to nonmetallic thermal insulation on austenitic stainless steel in Regulatory Guide 1.36.

6. QA controls for protective coatings in Regulatory Guide 1.54.

7. QA controls for radiological monitoring programs in Regulatory Guide 4.15.

8. QA controls for radioactive material packaging in Regulatory Guide 7.10.

9. Non-safety-related equipment not already covered by existing quality assurance requirements and relied upon to meet the requirements of 10 CFR 50.63 should be addressed by a program following the guidance of Regulatory Guide 1.155, Regulatory Position C.3.5. Such a program should ensure that the quality assurance guidance provided in Appendix A to Regulatory Guide 1.155 will be applied for such equipment, and that the guidance provided in Appendix B to Regulatory Guide 1.155 will be appropriately reflected in specifications for such equipment.[42]

10. Quality assurance of accident monitoring instrumentation is to be in accordance with to the guidance contained in Regulatory Guide 1.97, Table 1, paragraph 5, "Quality Assurance."[43]

11. Quality assurance for non-safety-related anticipated transient without scram (ATWS) equipment is to be managed in accordance with the guidance contained in Generic Letter 85-06 (Reference B.8).[44]

12. Use of an optical disk document imaging system for the storage and retrieval of record copies of quality assurance records should be in accordance with the guidance contained in Generic Letter 88-18 (Reference B.9).[45]

For standard design certification reviews under 10 CFR Part 52, the procedures above should be followed, as modified by the procedures in SRP Section 14.3 (proposed), to verify that the design set forth in the standard safety analysis report, including inspections, tests, analysis, and acceptance criteria (ITAAC), site interface requirements and combined license action items, meet the acceptance criteria given in subsection II. SRP Section 14.3 (proposed) contains

procedures for the review of certified design material (CDM) for the standard design, including the site parameters, interface criteria, and ITAAC.[46]

IV. EVALUATION FINDINGS

The reviewer will verify that sufficient information has been provided and that the review is sufficiently complete to support conclusions of the following type in either the staff's safety evaluation report (SER) or a letter to the applicant:

> On the basis of the staff's detailed review and evaluation of the quality assurance program description (QAPD) in the (topical report or safety analysis report) for (nuclear facility), we conclude the following:
>
> 1. The QAPD acceptably describes the authority and responsibility of management and supervisory personnel, performance/verification personnel, and self-assessment personnel.
>
> 2. The organizations and persons responsible for performing the verification and self-assessment functions have the authority and independence to conduct their activities without undue influence from those directly responsible for costs and schedules.
>
> 3. The QAPD describes a philosophy and controls that, when properly implemented, comply with the requirements of Appendix B and General Design[47] Criterion 1 of Appendix A to 10 CFR Part 50, 10 CFR Part 21, 10 CFR 50.55a, and 10 CFR 50.55(e); ~~with the criteria contained in SRP Section 17.3;~~[48] and with the regulatory positions in the following regulatory guides:
>
> | Regulatory Guide | Title | Revision or Date |
> |---|---|---|
> | (Reviewer fill in table of committed Regulatory Guides)[49] | | |
>
> 4. The QA program applies to activities and items that are important to safety.
>
> 5. Accordingly, the staff concludes that the applicant's QAPD complies with the applicable NRC regulations and industry standards and can be implemented for the (specify the application).
>
> A brief description of the applicant's QA program that highlights the more important aspects of the program is to be provided in the SER.

For design certification reviews, the findings will also summarize, to the extent that the review is not discussed in other safety evaluation report sections, the staff's evaluation of inspections, tests, analyses, and acceptance criteria (ITAAC), including design acceptance criteria (DAC), site interface requirements, and combined license action items that are relevant to this SRP section.[50]

V. IMPLEMENTATION

The following is intended to provide guidance to applicants and licensees regarding the NRC Staff's plan for using this SRP Section.[51]

Except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein will be used by the staff t~~T~~o evaluate conformance with Commission regulations.~~, the staff will use SRP Section 17.3 to review new QAPDs received 6 months or more after SRP Section 17.3 has been noticed in the Federal Register.~~[52] ~~The staff will review applicant proposals of alternative methods for complying with the specified portions of the Commission's regulations and guidance on a case-by-case basis.~~[53] ~~An~~ If an applicant for a ~~CP/OL~~ construction permit or operating license ~~that~~ references a standard design developed under ~~a~~ SRP Section 17.1 ~~QA program~~, a review of the standard plant designer's QA program will not be required ~~to adopt~~ under SRP Section 17.3 ~~for the standard plant designer's QA program~~.[54]

This SRP section will be used by the staff when performing safety evaluations of license applications submitted by applicants pursuant to 10 CFR 50 or 10 CFR 52.[55]

The staff will continue to review licensee-proposed revisions of quality assurance program descriptions that have been accepted by the staff in accordance with SRP Sections 17.1 or 17.2 against their original acceptance criteria. However, current licensees ~~may adopt~~ may request staff review under SRP[56] Section 17.3 if they choose to do so.

The provisions of this SRP section apply to reviews of applications docketed six months or more after the date of issuance of this SRP section.[57]

VI. REFERENCES

A. Regulatory guidance issued in response to Appendix B of 10 CFR Part 50:

1. Regulatory Guide 1.8, "~~Personnel Selection and Training~~ Qualification and Training of Personnel for Nuclear Power Plants."

2. Regulatory Guide 1.26, "Quality Group Classification, and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants,"

3. Regulatory Guide 1.28, "Quality Assurance Program Requirements (Design and Construction)," using NQA-1 and NQA-2.

4. Regulatory Guide 1.29, "Seismic Design Classification."

5. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operations)~~,~~." ~~with appropriate substitution of NQA-1 and NQA-2 for N-45.2 and its daughter standards.~~[58]

6. Regulatory Guide 1.152, "Criteria for Programmable Digital Computer System Software in Safety-Related Systems of Nuclear Power Plants."

7. NRC Letter to All Holders of Operating Licenses and Construction Permits for Nuclear Power Reactors, "Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products (Generic Letter 89-02)," March 21, 1989. ~~and its endorsement of~~[59]

8. EPRI NP-5652, "Guideline for the Utilization of Commercial-Grade Items in Nuclear Safety-Related Applications (NCIG-07)~~;~~."[60]

9. NRC Letter to All Holders of Operating Licenses and Construction Permits for Nuclear Power Reactors, "Licensee Commercial-Grade Procurement and Dedication Programs (Generic Letter 91-05)," April 9, 1991.[61]

B. Other Programmatic QA Guidance:

~~1. Fire protection QA controls are to be in accordance with Regulatory Positions 2 and 4 of Branch Technical Position CMEB 9.5-1 as given in SRP Section 9.5.1.~~[62]

[63] ~~2.~~1. ~~Radioactive waste QA controls are to be in accordance with Regulatory Position 6 of~~ [64]Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light Water-Cooled Nuclear Power Plants."

~~3.~~2. ~~QA controls are required by a commitment to~~ [65]Regulatory Guide 1.36, "Nonmetallic Thermal Insulation for Austenitic Stainless Steel."

~~4.~~3. Regulatory Guide 1.54, "Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants."

~~5. Regulatory Guide 2.5, "Quality Assurance Program Requirements for Research Reactors."~~

~~6. Regulatory Guide 3.3, "Quality Assurance Program Requirements for Fuel Reprocessing Plants and for Plutonium Processing and Fuel Fabrication Plants."~~

~~7. Regulatory Guide 3.21, "Quality Assurance Requirements for Protective Coatings Applied to Fuel Reprocessing and to Plutonium Processing and Fuel Fabrication Plants."~~[66]

~~8.~~4. Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment."

~~9.~~5. Regulatory Guide 7.10, "Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material."

6. Regulatory Guide 1.155, "Station Blackout."[67]

7. Regulatory Guide 1.97, "Instrumentation for Light-water-cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."[68]

8. NRC Letter to All Power Reactor Licensees and All Applicants for Power Reactor Licenses, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety-related (Generic Letter 85-06)," April 6, 1985.[69]

9. NRC Letter to All Licensees of Operating Reactors and Holders of Construction Permits, "Plant Record Storage on Optical Disks (Generic Letter 88-18)," October 20, 1988.[70]

10. NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," May 1980.[71]

11. NRC Letter to All Holders of Operating Licenses, Applicants for Operating Licenses and Holders of Construction Permits for Power Reactors, "NRC Use of the Terms, 'Important to Safety' and 'Safety Related' (Generic Letter 84-01)," January 5, 1984.[72]

12. NRC Letter to All Licensees and Applicants of Nuclear Power Reactors, "Technical Specifications for Fire Protection Audits (Generic Letter 82-21)," October 6, 1982.[73]

C. Regulations and Standards:[74]

1. 10 CFR Part 21, "Reporting of Defects and Noncompliance."

2. 10 CFR Part 50, §50.34, "Contents of Applications; Technical Information."[75]

3. 10 CFR Part 50, §50.54, "Conditions of Licenses."

4. 10 CFR Part 50, §50.55, "Conditions of Construction Permits."

5. 10 CFR Part 50, §50.55a, "Codes and Standards."

6. 10 CFR Part 50, §50.63, "Loss of All Alternating Current Power."[76]

7. 10 CFR Part 50, §50.120, "Training and Qualification of Nuclear Power Plant Personnel."[77]

8. 10 CFR Part 50, Appendix A, General Design Criterion 1, "Quality Standards and Records."

9. 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."

10. 10 CFR Part 52, §52.47, "Contents of Applications."[78]

11. 10 CFR Part 50, §50.49, "Contents of Applications."[79]

12. ANSI N45.2, "Quality Assurance Program Requirements for Nuclear Facilities," 1977.[80]

13. ANSI/ASME Standard NQA-1, "Quality Assurance Program Requirements for Nuclear Facility Applications," 1983.[81]

14. ANSI/ASME Standard NQA-2, "Quality Assurance Requirements for Nuclear Facility Applications," 1986.[82]

SRP Draft Section 17.3
Attachment A - Proposed Changes in Order of Occurrence

Item numbers in the following table correspond to superscript numbers in the redline/strikeout copy of the draft SRP section.

Item	Source	Description
1.	Current PRB name and abbreviation	Changed PRB to Quality Assurance and Maintenance Branch (HQMB).
2.	Current PRB abbreviation	Changed PRB to HQMB.
3.	Current PRB abbreviation	Changed PRB to (HQMB).
4.	Editorial modification	Provided "SAR" as initialism for "safety analysis report."
5.	Editorial, PRB Comments	Added explanation of the difference between SRP Section 17.3 and SRP Sections 17.1/17.2. This reflects comments from HQMB that NQA-1/2 or ANSI N45.2 are acceptable approaches and that they still use 17.1 and 17.2 to review programs based upon N45.2. Also added discussion of ongoing efforts by the Staff to address graded QA.
6.	SRP-UDP format item	Deleted decommissioning; separate review documents are under development to handle decommissioning.
7.	SRP-UDP format item	Added Review Interfaces subsection of Areas of Review consistent with SRP-UDP required format so that reviews performed in other SRP Sections which are relevant to the overall review are detailed in their own subsection.
8.	Potential Impact 23068	Added a review interface reflecting review of reliability assurance programs.
9.	SRP-UDP Integration of Bolting Issues, Potential Impact 19960	Added a review interface reflecting reviews of bolting and threaded fastener programs under new SRP Section 3.13.
10.	SRP-UDP format item	Added standard end paragraph for Review Interfaces subsection consistent with SRP-UDP required format so that the location of criteria and review methods for reviews performed in other SRP Sections is identified.
11.	Editorial	Deleted introductory sentence as unnecessary since this statement is inherent in the designation of the Acceptance Criteria subsection.
12.	Editorial	Separated general Acceptance Criteria into separate paragraphs and added numerical designation to facilitate referencing these criteria.
13.	Editorial	Identified 10 CFR Part 21 as an acceptance criterion (see specific criteria paragraph II.A.7.a).

Item	Source	Description
14.	Editorial	Identified 10 CFR 50.55a as an acceptance criterion (see specific criteria paragraph II.A.7.a). Also defined acronym SSC for structures, systems and components, consistent with usage in other SRP sections.
15.	Editorial	Identified 10 CFR 50.55(e) as an acceptance criterion (see specific criteria paragraph II.A.7.a).
16.	Editorial modification	Changed citation format for GDC 1 to parallel that used in most other SRP sections.
17.	Editorial	Changed "acceptance criteria" to "specific criteria" consistent with most other SRP sections, leaving regulations as "acceptance criteria" and identifying other guidance as "specific criteria."
18.	Editorial	Struck "acceptance" to continue distinction between "acceptance criteria" and "specific criteria."
19.	Editorial modification	Added "General Design" to identify GDC 1 as per other SRP sections.
20.	Editorial	Changed "is to comply" to "should follow" since Regulatory Guides are not requirements, except to the extent that commitments thereto become part of a license or permit.
21.	Editorial	Changed "subsection VI.A of this chapter" to "subsection III.A of this SRP Section" to reflect relocation of review guidance to Review Procedures (subsection III) from References (subsection VI) and to clarify that this subsection is part of this SRP section, not the entire chapter, which consists of more than one section.
22.	Editorial	Changed "VI.A" to "III.A" to reflect relocation of review guidance.
23.	Editorial	Changed "is to comply" to "should follow" since Regulatory Guides are not requirements, except to the extent that commitments thereto become part of a license or permit.
24.	Editorial	Changed "Section VI.B of this chapter" to "subsection III.B of this SRP Section" to reflect relocation of review guidance to Review Procedures (subsection III) from References (subsection VI) and to clarify that the referenced subsection is part of this SRP section, not the entire chapter, which consists of more than one section.
25.	Editorial	Changed "Section VI.B" to "Subsection III.B" to reflect relocation of review guidance.

Item	Source	Description
26.	Editorial	Changed "VI.A" to "III.A" to reflect relocation of review guidance.
27.	Editorial	Revised text to remove discussion of decommissioning (see added footnote in subsection I).
28.	SRP-UDP format item, develop technical rationale	Added "Technical Rationale" to ACCEPTANCE CRITERIA and formatted as numbered paragraphs describing the bases for referencing the General Design Criteria and other regulations.
29.	Editorial	Specified subsections III.A and III.B to reflect relocation of review guidance to Review Procedures.
30.	Editorial	Specified subsections III.A and III.B to reflect relocation of review guidance to Review Procedures.
31.	Current PRB abbreviation	Changed PRB to HQMB.
32.	Editorial	Changed "Chapter 17 of the SRP" to "this Chapter of the SRP" since 17.3 is part of Chapter 17.
33.	Editorial modification	Defined "NRR" as "Office of Nuclear Reactor Regulation."
34.	Editorial	Subsections III.A and III.B were adapted from text relocated from subsections VI.A and VI.B, respectively, with addition of guidance from integrated impacts as indicated.
35.	Integrated Impact No. 917	Added "as augmented by Generic Letter 91-05".
36.	PRB Comments	To address HQMB comments regarding application of SRP 17.3 to non-safety-related equipment, a footnote was added to explain that the existing and new guidance applicable to such equipment may be under elements of an Appendix B program or other program.
37.	Integrated Impact Nos. 918 and 1068	Added discussion of TMI Item I.F.1, related regulations, and Generic Letter 84-01 concerning QA program coverage beyond safety related equipment.
38.	PRB Comment	Added statement, based upon HQMB comment that RGs 1.26 and 1.29 serve as primary criteria and should be sufficient to address QA coverage of non-safety-related components. Also included note of definitions of equipment important to safety in RG 1.97 and in 10 CFR 50.49.
39.	Integrated Impact No. 920	Cited 10 CFR 50.120 since it provides for training program consideration of QA program changes.

Item	Source	Description
40.	Integrated Impact No. 916, Reference Verification	Updated the designation of the fire protection Branch Technical Position from "CMEB 9.5-1" to "SPLB 9.5-1" and added reference to GL 82-21 for audit guidance. Reference to GL 86-10 is not necessary since it has been addressed in the revised BTP and need not be discussed in this section.
41.	Editorial	Specified "Position C.6" rather than "Position 6," consistent with usual format of references to RG positions.
42.	Integrated Impact No. 1526	Added RG 1.155, position C.3.5, as guidance applicable to certain non-safety related equipment.
43.	Integrated Impact No. 1525	Added RG 1.97 as guidance applicable to accident monitoring instrumentation.
44.	Integrated Impact No. 1333	Added GL 85-06 as guidance applicable to ATWS equipment that is not safety-related.
45.	Integrated Impact No. 1527	Added GL 88-018 as guidance applicable to optical disk storage of plant records.
46.	SRP-UDP Guidance, Implementation of 10 CFR 52	Added standard paragraph to address application of Review Procedures in design certification reviews.
47.	Editorial modification	Added "General Design" to identify GDC 1 as per other SRP sections.
48.	Editorial	Removed Evaluation Finding reference to the SRP; this is an unusual, and unnecessary reference since the SRP should only provide review guidance to the NRC reviewer, not requirements or guidance for applicants.
49.	Editorial	Added parenthetical note to prompt reviewer to fill in table of RGs.
50.	SRP-UDP Format Item, Implement 10 CFR 52 Related Changes	To address design certification reviews a new paragraph was added to the end of the Evaluation Findings. This paragraph addresses design certification specific items including ITAAC, DAC, site interface requirements, and combined license action items relevant to SRP 6.3.
51.	Editorial	Added normal introductory sentence, for consistency with other SRP sections.
52.	Editorial	Revised the text to be more consistent with statements made in other SRP sections and to remove date-specific detail that is redundant to later sentence.
53.	Editorial	Deleted sentence as redundant to earlier (new) sentence.

Item	Source	Description
54.	Editorial modification	Changed sentence to improve clarity concerning applicability of SRP Section 17.3 for applications that reference a standard plant design.
55.	SRP-UDP Guidance, Implementation of 10 CFR 52	Added standard sentence to address application of the SRP section to reviews of applications filed under 10 CFR Part 52, as well as Part 50.
56.	Editorial	The licensee cannot adopt SRP Section 17.3 since SRP sections serve as guidance for NRR staff responsible for reviewing applications to construct and operate nuclear power plants (see footnote on first page of each SRP section).
57.	SRP-UDP Guidance	Added standard paragraph to indicate applicability of this section to reviews of future applications.
58.	Editorial	Relocated this clarification to review procedures.
59.	SRP-UDP Format Guidance	Revised the listing of GL 89-02 to follow SRP-UDP format for GL references and struck text to allow separation of NCIG-07 into a separate reference listing.
60.	Editorial	Separated references into two separate listings.
61.	Integrated Impact No. 917	Added Generic Letter 91-05 as a reference.
62.	SRP-UDP Format Guidance, Editorial	This detail was relocated to Review Procedures. SRP-UDP format guidance does not list SRP sections in References subsection.
63.	Editorial	This and subsequent reference numbers were revised to accommodate removal and addition of references.
64.	Editorial	This detail relocated to Review Procedures.
65.	Editorial	This detail relocated to Review Procedures.
66.	Editorial	Removed references to Regulatory Guides that are not applicable to light water power reactors (scope of coverage of NUREG-0800).
67.	Integrated Impact No. 1526	Added RG 1.155 as a reference.
68.	Integrated Impact No. 1525	Added RG 1.97 as guidance applicable to accident monitoring instrumentation.
69.	Integrated Impact No. 1333	Added GL 85-06 as a reference.
70.	Integrated Impact No. 1527	Added GL 88-018 as a reference.
71.	Integrated Impact No. 1068	Added NUREG-0660 to list of references.
72.	Integrated Impact No. 1068	Added GL 84-01 as a reference.

Item	Source	Description
73.	Integrated Impact No. 916	Added GL 82-21 to subsection VI to provides staff positions on an acceptable audit program in the fire protection area.
74.	Editorial, SRP-UDP Guidance	Added a third subsection to references to list referenced regulations and standards.
75.	Integrated Impact Nos. 918 and 1068	Added 10 CFR 50.34(f) as a reference to support text changes.
76.	Integrated Impact No. 1526	Added 10 CFR 50.63 as a reference.
77.	Integrated Impact No. 920	Added 10 CFR 50.120 as a reference.
78.	Integrated Impact No. 1068	Added 10 CFR 52.47 as a reference to support text changes.
79.	Editorial	Added reference listing of 10 CFR 50.49 to support citation of the standard in the text.
80.	Reference Verification	Specified N45.2-1977 based upon the version endorsed by RG 1.28, Rev. 2 which was in effect at the time of the last revision of SRP Sections 17.1 and 17.2.
81.	Reference Verification	Specified NQA-1-1983 based upon endorsement by RG 1.28, Rev. 3. The current version is NQA-1, 1992.
82.	Reference Verification	Specified NQA-2-1986 based upon review by SIAC documented in NUREG/CR-5152. NQA-2 was never formally endorsed by the NRC. It has since been incorporated into NQA-1. The latest version of NQA-1 is 1992.

Integrated Impact No.	Issue	SRP Subsections Affected
710	IEEE 279-1971 is endorsed by RG 1.152. The latest version of this standard is IEEE 603 1991. Consider future work to revise RG 1.152 to endorse the latest version of IEEE 279/603.	None, tracked by IPD 7.0 form 17.3-1.
759	RG 1.8 endorses the following standards: ANS 3.1 1981 and ANSI N18.1 1971. The latest version for both of these standards is ANS 3.1 1993. Consider future work to revise RG 1.8 to endorse the latest version of these standards.	None, tracked by IPD 7.0 form 17.3-2.
760	RG 4.15 endorses the following standards: ANSI N13.10 1974 and NCRP 58 1978. The latest versions of these standards are: ANSI N42.18 1980 (R89) and NCRP 58 1985. Consider future work to revise RG 4.15 to endorse the latest versions of these standards.	None, tracked by IPD 7.0 form 17.3-3.
914	RG 1.36 endorses ASTM C692-71, "Standard Method for Evaluating Stress Corrosion effect of Wicker-Type Thermal Insulation on Stainless Steel." This ASTM standard now has a 1990 revision date and the revised standard could have provisions which may effect the review criteria of SRP Section 17.3.	None, tracked by IPD 7.0 form 17.3-4.
916	Consider adding references to GL 86-10 and GL 82-21 to augment the current reference to BTP CMEB/SPLB 9.5-1.	REVIEW PROCEDURES, subsection III.B REFERENCES, Subsection VI.B
917	Consider adding a reference to GL 91-05 to augment the current reference to GL 89-02.	REVIEW PROCEDURES subsection III.A REFERENCES, subsection VI.A
918	Consider adding citations of 50.34(f)(3)(ii) and (iii) to Acceptance Criterion II.A.7.a.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.C
919	Consider adding 10 CFR 50.65 to acceptance criterion II.A.7.a to reflect issuance of the maintenance rule.	None.
920	Consider adding 10 CFR 50.120 to Acceptance Criterion II.A.7.a.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.C

SRP Draft Section 17.3
Attachment B - Cross Reference of Integrated Impacts

Integrated Impact No.	Issue	SRP Subsections Affected
1068	Revise Acceptance Criteria to reflect the requirements of 50.34(f)(3)(ii) to include all structures, systems, and components important to safety.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.B REFERENCES, subsection VI.C
1333	Add identification of Generic Letter 85-06 as criteria for quality assurance controls to be provided for non-safety-related equipment required by the ATWS rule, 10 CFR 50.62.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.B
1525	Add acceptance criteria for quality assurance guidance for accident monitoring instrumentation.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.B
1526	Add acceptance criteria on the quality assurance guidance for station blackout equipment.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.B REFERENCES, subsection VI.C
1527	Revise SRP Section 17.3 to address the unique requirements of optical disk storage systems and the provisions of Generic Letter 88-18.	REVIEW PROCEDURES, subsection III.B REFERENCES, subsection VI.B